

(12) INTERNATIONAL PUBLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

**(19) World Intellectual Property
Organization
International Bureau**



(43) International Publication Date
1 July 2004 (01.07.2004)

PCT

(10) International Publication Number
WO 2004/056126 A1

(51) International Patent Classification⁷: H04N 7/62, 7/24

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(21) International Application Number:

PCT/TB2003/005934

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(22) International Filing Date:

15 December 2003 (15.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

02080318.5 16 December 2002 (16.12.2002) EP

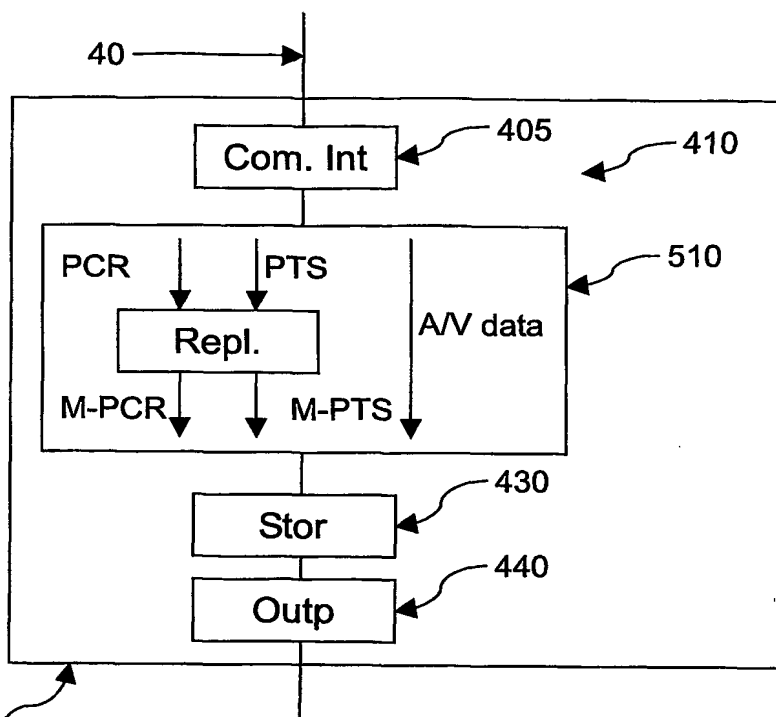
(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,

[Continued on next page]

(54) Title: SYSTEM FOR MODIFYING THE TIME-BASE OF A VIDEO SIGNAL



(57) Abstract: A storage device 500 includes an input 405 for receiving a digital video stream complying with a predetermined video encoding standard via a digital video communication system. The stream includes a sequence of digital video frames, a sequence of program clock reference stamps (PCR) and a sequence of video presentation time stamps (PTS). A time-base modifier 510 replaces the PTS's by respective modified video presentation time stamps (M-PTS) based on a constant predetermined frame time between successive presentation time stamps and replaces the PCR's by respective modified program clock reference stamps (M-PCR) by scaling the PCR's using a scaling factor that depends on a ratio of an expected time between a video presentation time stamp j and a preceding video presentation time stamp $j-n$ and an actual time between the video presentation time stamp j and the preceding video presentation time stamp $j-n$, where $j \geq n > 0$. The expected time is n times the predetermined frame time.

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W 004/056126 A1



SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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Published:

— with international search report

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 03/05934

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N7/62 H04N7/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, A	EP 1 289 306 A (ST MICROELECTRONICS INC) 5 March 2003 (2003-03-05) abstract paragraph '0010! paragraph '0053! - paragraph '0061! figures 1,7,8	1-16
A	EP 1 076 461 A (THOMSON MULTIMEDIA SA) 14 February 2001 (2001-02-14) abstract paragraph '0002! - paragraph '0005! paragraph '0025! figure 1	1-16
	-/-	

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☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

24 March 2004

Date of mailing of the international search report

31/03/2004

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB 03/05934

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>EP 1 137 286 A (RCA THOMSON LICENSING CORP) 26 September 2001 (2001-09-26) abstract paragraph '0012! - paragraph '0016! paragraph '0021! - paragraph '0024! figures 1,3 -----</p>	1-16

INTERNATIONAL SEARCH REPORT

International Application No
PCT/15 03/05934

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1289306	A	05-03-2003	US 2003043924 A1 EP 1289306 A2 JP 2003179879 A	06-03-2003 05-03-2003 27-06-2003
EP 1076461	A	14-02-2001	FR 2797549 A1 CN 1284718 A EP 1076461 A1 HU 0003278 A2 JP 2001094943 A	16-02-2001 21-02-2001 14-02-2001 29-06-2002 06-04-2001
EP 1137286	A	26-09-2001	US 5486864 A EP 1137286 A2 EP 0949823 A1 CN 1283924 A CN 1334674 A CN 1100878 A ,B DE 69421444 D1 DE 69421444 T2 EP 0624983 A2 ES 2140477 T3 JP 7046592 A JP 2002027467 A JP 3479518 B2 JP 2001358685 A RU 2115261 C1 RU 2198469 C2 SG 82528 A1 SG 94359 A1 TR 28291 A TR 28315 A US 5467137 A US 5565923 A	23-01-1996 26-09-2001 13-10-1999 14-02-2001 06-02-2002 29-03-1995 09-12-1999 18-05-2000 17-11-1994 01-03-2000 14-02-1995 25-01-2002 15-12-2003 26-12-2001 10-07-1998 10-02-2003 21-08-2001 18-02-2003 08-04-1996 09-04-1996 14-11-1995 15-10-1996